

things of beauty will find due cause for revelry here.

Overall, I found this to be an excellent book that combines innovative and solid scholarship with clarity of writing. It is a "must-have" reference text for any researcher interested in the biocultural determinants of human fertility and is appropriate as a textbook at the graduate level. I expect it to remain a standard in the literature of demographic anthropology and reproductive ecology for many years to come.

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LITERATURE CITED

Darwin C (1859) *On the Origin of Species by Means of Natural Selection, or The Preservation of Favoured Races in the Struggle for Life* (facsimile of the first edition). London: Penguin Books.

A FIELD GUIDE TO JOINT DISEASE IN ARCHEOLOGY. By Juliet Rogers and Tony Waldron. New York: John Wiley. 1995. 119 pp. ISBN 0-471-95506-X. \$48.00 (paper)

As its title suggests, this book is intended as a compact guide to identification and classification of joint disease in human skeletal samples. Many will find the authors' approach to the topic quite unique, especially their discussion of disease definition and classification. While the book's emphasis on distinguishing between disease and aging processes and between disease incidence and prevalence is laudable, its incomplete and out-of-date bibliography gives some hint of the book's many inadequacies. Its citations overlook a substantial literature in paleopathology and population-oriented studies, and frequently tend not to be peer-reviewed publications. Unfortunately, it is this failure to address the extensive clinical, pathological, and paleopathological literature which fatally flaws this book.

The authors' own descriptive and classificatory approach to disease seems so conjectural that their comment that "modern pathology has so little to offer" (p. 99) belies their total disregard of the contributions of clinically documented skeletal collections to this field. This segregation of paleopathology from clinical and pathological investigations (as illustrated in Fig. 1.2) is lamentable, because the spectrum of disease actually manifest is established from known clinical and pathological case studies, and properly informs the creation of diagnostic criteria.

Thus their statement that "appearances may or may not conform to modern textbook appearances" (p. 15) underscores the authors' own idiosyncratic approach. This disregard for clinical criteria may also have sponsored many of the conceptual inconsistencies that have compromised this volume. For example, it is correctly acknowledged (on p. 7) that peripheral joint ankylosis does not occur in rheumatoid arthritis, yet Chapter 6 mistakenly holds this condition to *identify* rheumatoid arthritis! Although there are many to draw from, only a few of the book's major errors will be discussed here.

The treatment of osteoarthritis is especially problematic. While making the excellent point that osteophyte size is unrelated to disease severity, the book then refers to flat, joint-surface plaques as equivalent to osteophytes (p. 26). This is certainly not standard usage, nor is it consistent with the subsequent assertion that such plaques are *not* part of osteoarthritis. Contrary to the theory expressed, osteophytes are not "a minor criteria" [sic, p. 26] for classification of osteoarthritis, and its diagnosis based on eburnation alone is at variance with the peer-reviewed literature (which also criticizes surface pitting for this use, as advised here). Similarly, the claim that "except the eburnation of osteoarthritis, there are no pathognomonic signs" (p. 15) contradicts the medical literature, which notes the premier position of synovial joint osteophytes, just as "the cardinal sign of osteoarthritis on an x-ray is narrowing of the joint space" (p. 37) is false, such narrowing having been shown

to document the *extent* of disease, not simply its presence (according to criteria adopted by the American College of Rheumatology; see Altman et al., 1990). Osteophytosis and new bone formation are so hopelessly confounded (Table 3.2) as to constitute diagnostic nihilism. The claim that "most authorities include pyrophosphate arthropathy within the general spectrum of osteoarthritis" (p. 36) is simply not true. While the term "erosive osteoarthritis" is a controversial issue, a gull-wing appearance is not diagnostic. Neither is the comment that erosive arthritis is "now considered to be just a severe stage of normal interphalangeal joint osteophytosis" substantiated by the clinical literature, while Figure 4.2, purporting to illustrate this condition, is in fact highly characteristic for gout (e.g., fourth right tarsal-metatarsal joint erosion with sclerotic margin and possible overhang), although spondyloarthropathy is a less likely possibility.

The authors' fundamental misconception of gout is revealed by their statement that "deposition of crystals is secondary to high uric acid levels in the blood" (p. 78), when actually it is acute changes in uric acid levels that precipitate crystal deposition. Five percent of individuals with gout actually have low or normal levels. I know of no foundation for the statement that "OA changes are also noted frequently in gout" (p. 80); misidentifying gout as erosive osteoarthritis (Fig. 4.2) further exposes this problem.

Another important arena of misconception concerns erosive disease; the authors recognize true erosion only when "cortical bone is lost and underlying trabeculae exposed," although Leisen et al. (1987) have demonstrated the central importance of "fronts of resorption" to its identification. Claiming to describe two rheumatoid cases, the authors comment that "it is quite likely the expression of rheumatoid arthritis in past populations were different from those in contemporary populations. . . ." (p. 55), a conjecture again contradicting the peer-reviewed literature. Putative rheumatoid involvement in Figures 6.1 and 6.4 is actually subchondrally distributed and matches their illustration for classic spondyloarthropathy (Fig. 1.4), contrasting with the marginal erosions

found in the rheumatoid condition. The same problem marks Figures 6.3 and 6.6, misidentified as rheumatoid arthritis but showing, respectively, the normal or increased peri-erosional trabeculae and the facet erosions classically manifest in spondyloarthropathy, while Figure 6.7 misidentifies pseudoerosions when actually the bone remodeling of spondyloarthropathy is clearly revealed.

The chapter on spondyloarthropathy fails to address the spectrum of disease, since not all afflicted individuals have pauci-articular disease. Similarly, the claim that "spinal fusion which is almost always seen" in spondyloarthropathy (p. 70) is at variance with its manifestation in only 40% of cases as reported in the clinical and peer-reviewed paleopathology literature. The statement (p. 75) that "erosions of Reiter's [syndrome] are marginal as in PA" [psoriatic arthritis] is erroneous; while they can be marginal, subchondral erosions are prominent in those disorders. The observation that "arthritis mutilans does not occur in Reiter's syndrome" is also wrong. Finally, Figure 8.4, purporting to illustrate a proliferative erosion, appears to be an erosion with secondary osteoarthritis.

The authors' confused technical understanding of the immunological aspects of arthropathy is evidenced in their claim that there are "no signs in the skeleton which are pathognomonic of RA but it is possible that RF (rheumatoid factor) survives in bone" (p. 62). Rheumatoid factor assay is a "*functional*" biologic assay for an immunoglobulin (rheumatoid factor) that binds to other immunoglobulins. Even when protein or DNA is preserved, *intact* structural preservation is quite rare and I am not sure that functional activity has ever been documented. This contrasts with the comment that "we are some way off being able to" detect HLA-B27, which is now almost routinely identified through polymerase chain reaction (PCR) and is not dependent upon the integrity of functional protein.

Finally, the cross-sectional nature of most clinical studies challenges the authors' claim that "one cannot make inferences about a dynamic process from a series of static observations" (p. 104). Pursuing that statement to its

natural conclusion might well lead to diagnostic nihilism. By its nature, the archeological record essentially provides cross sections of populations. While its level of precision can be argued, the archeological record clearly has a great deal to offer for understanding joint disease if recognized scientific methods are followed. *A Field Guide to Joint Disease in Archeology*, unfortunately, does not provide the necessary guidance for such study.

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HUMAN EVOLUTION. By Milford H. Wolpoff.
 New York: McGraw-Hill. 1995. 921 pp.
 ISBN 0-07-071827-X. \$40.00 (paper).

This is a revised edition of the author's 1980 textbook, *Paleoanthropology*. Much has changed in these 15 years. The greatest change is in the amount of information available about human evolution, and this is expressed in the size of the two editions: The 1980 volume is a manageable 379 pages whereas the present text contains 921 numbered pages plus more than 300 pages of figures. It is printed on standard-size paper (8 1/2" by 11"), is 6 cm thick, and weighs over 2,500 g. The author writes in a succinct style wasting few words. The volume of information contained here, therefore, is immense.

It would be a remarkable achievement for a single author to assimilate this much information from published sources, but much of what is recorded here are the author's own observations on the original fossils. There is more information about the morphology of hominid fossils here than in any other single source. The ideas expressed in the text are often those developed by the author and not necessarily those of the majority of paleoanthropologists. For an explanation of the consensus view among scholars in this field, the reader would do well to turn elsewhere.

Like the 1980 edition, the book is divided into four parts: the basis for human evolution, the appearance of the hominid line, the development of the human pattern, and the

evolution of modern people. There are 14 chapters in both editions, but the text has been substantially revised, developed, and expanded. Chapter 1 primarily reviews methods of geological dating and ends, as do all chapters, with an essay, "Anatomy of a controversy." These spicy vignettes address contentious issues such as "Women and hominid origins," "Climate changes in hominid evolution," and "Out of Africa—out of luck." Chapter 2 describes processes of evolution and contains thoughtful discussion of topics such as punctuated equilibrium, exaptation, and constraints. Living and extinct primates are the subjects of Chapter 3. The phylogenetic relationships among the Miocene hominoids are difficult to understand and the author is justifiably cautious. As with most topics, the discussion is quite up-to-date and even includes information not yet published.

The next hundred pages of text review what makes hominids unique and why. Subjects include bipedalism, birthing, brains, consciousness, language, neural reorganization, culture, mastication, maturation, and theories on human origins. There is so much information and thoughtful analysis and synthesis in this section that it could stand alone as a separate book. The next section is on *Australopithecus* and *Homo habilis* (over 200 pages) and also could make a separate book. Here the reader encounters detailed and current descriptions and analyses of all important fossils. Some of these specimens have not been described in the published